

MARKED UP CLAIMS

CLAIMS

What is claimed is:

1. (As Amended) A contactless sheet resistance measurement apparatus for measuring sheet resistance and p-n junction conductance comprising:
 - means for illuminating the area of semiconductor structure with intensity modulated light;
 - means for detecting SPV signals inside and outside ~~said~~ the illumination area optically coupled to ~~said~~ the illuminating means; and
 - means for measurement of ~~said~~ the SPV signals inside and outside the illumination area connected to ~~said~~ means for detecting SPV signals.
2. (As Amended) A ~~The~~ contactless apparatus ~~for measuring the sheet resistance~~ of claim 1, wherein ~~said~~ the illumination means comprises a light emitting diode with a driver forming the sinusoidal illumination and an optical fiber directing the light onto the wafer surface.
3. (As Amended) A ~~The~~ contactless apparatus ~~for measuring the sheet resistance~~ of claim 1 and 2, wherein ~~said~~ the means for detecting of SPV signals comprises a transparent conducting electrode optically coupled with a light source used for detecting SPV signals inside the illumination area and a non transparent electrode used for detecting SPV signals outside the illumination area.
4. (As Amended)) A ~~The~~ contactless apparatus ~~for measuring the sheet resistance~~ of claim 3, wherein ~~said~~ the transparent conducting electrode is a glass or quartz disk with ITO coating and the non transparent electrode is a metal ring coaxially installed to ~~said~~ the glass or quartz disk.

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5. (As Amended) A ~~The contactless sheet resistance measurement~~ apparatus for measuring the sheet resistance of claim 3, wherein the transparent and conducting electrode is a glass or quartz disk with an ITO coating and the non transparent electrode is a ~~part of the metal ring~~ metal arc coaxially installed to said the glass disk.
9. (New) The apparatus of claim 1 wherein the illumination means comprises a laser diode with a driver forming a sinusoidal illumination and an optical fiber directing the light onto the wafer surface.
10. (New) The apparatus of claim 1 wherein the means for detecting SPV signals includes a grounded metal ring coaxially installed to the disk between the disk and the non transparent electrode metal ring.
11. (New) The apparatus of claim 5 wherein the means for detecting SPV signals includes a grounded metal arc coaxially installed to the disk between the disk and the non transparent electrode metal arc.